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BISTI WILDERNESS

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Bureau of Land Management
Department of the Interior

FEBRUARY 1986

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WILDERNESS MANAGEMENT PLAN

FOR THE

BISTI WILDERNESS AREA

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

ALBUQUERQUE DISTRICT OFFICE

FARMINGTON RESOURCE AREA

SAN JUAN COUNTY, NEW MEXICO

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Recommended by: William L. Overbaugh November 1985
William L. Overbaugh
Outdoor Recreation Planner, Farmington Resource Area

Recommended By: Mathew Millenbach November 1985
Mathew Millenbach
Area Manager, Farmington Resource Area

Recommended by: L. Paul Applegate November 1985
L. Paul Applegate
District Manager, Albuquerque District

Approved By: Charles W. Luscher November 1985
Charles W. Luscher
State Director, New Mexico

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PART I

INTRODUCTION

Purpose of the Plan

This wilderness management plan serves a threefold purpose. First, it serves to fulfill the BLM Manual 8561 requirement that a management plan be prepared for all BLM administered wilderness areas. Second, it emphasizes the administration of the Bisti Wilderness Area (BWA) by establishing clearly written management objectives and policies that function as a road map to guide compatible management actions. And third, it identifies a sequence for implementing prescribed management actions in order to achieve goals and objectives and comply with the intentions of the governing legislation.

This wilderness management plan is area specific and directed toward the administration of resources and uses in the BWA. Resource programs actively operating in the BWA must update their management efforts and adjust those portions of program implementation that are no longer applicable in order to comply with this plan. It is a technical document intended primarily for the Bureau of Land Management, Farmington Resource Area staff, however, it will be available for public review.

The wilderness management emphasis provided in this document is the result of a one year planning effort involving document preparation, review and public input. This plan is designed to cover a 10-year management period. It will be evaluated and revised as necessary at least every five years or as dictated by significant changes in resource conditions or national direction.

Organization of the Plan

This plan is arranged in a four-part document. Wilderness management information is presented in a logical progression from the general to the specific. Part I introduces the reader to the BWA and the wilderness management plan. Basic management guidance is provided in Part II in the form of wilderness philosophy, broad national goals and specific management objectives. The wilderness management program is presented in Part III and includes descriptions of the objectives, current situation, assumptions, management policies and prescribed management actions for each of the major wilderness elements identified for the BWA. Part IV discusses the management strategy that focuses on a more specific level of wilderness management planning, namely the limits of acceptable change system as applied to the BWA. The appendices supplement portions of the plan and include an assessment of the environmental impacts of plan implementation and its alternatives.

Wilderness Area Overview

Background

The Federal Land Policy and Management Act (FLPMA) of 1976 incorporated the BLM as a full participant in the National Wilderness Preservation System. This law directed the BLM to review all public lands and identify those that met the definition of wilderness established by Congress in the Wilderness Act of 1964. During the inventory phase of the review process, a wilderness inventory unit of 3,968 acres was identified. The wilderness inventory unit was formally designated as the Bisti Wilderness Study Area (WSA) on November 28, 1979. The study phase of the review process determined the Bisti WSA to be suitable for wilderness designation and this determination was recommended in the 1982 Bisti De-na-zin Ah-shi-sle-pah Proposed Wilderness Areas Environmental Impact Statement.

The general area had received high level public, private and news media attention even before it was identified as a WSA. The entire WSA had been identified for coal leas-

ing in previous planning documents and intense interest had been shown in the development of energy resources. According to a registration book, visitor use peaked in 1982 after the Secretary of the Interior removed WSA status from the Bisti due to a legal interpretation of FLPMA. Public outcry helped to re-establish the area as a WSA. The Bisti WSA was formally designated wilderness as part of the San Juan Basin Wilderness Protection Act of 1984 (refer to Appendix A), signed into law on October 30, 1984. This Act has the distinction of being the first wilderness bill exclusively for BLM lands and the Bisti and De-na-zin Wilderness Areas are the first for BLM in New Mexico.

Location

The BWA is located in northwestern New Mexico, San Juan County, in an area commonly referred to as the San Juan Basin (refer to Map A). The designated boundaries of the BWA are completely within Townships 23 and 24 North, Range 13 West, New Mexico Principal Meridian. The city of Farmington, New Mexico, with a population of approximately 37,000 is the largest proximate population center and lies about 30 air miles to the north.

Access

The BWA is most readily accessible from Farmington, New Mexico, by traveling south on State Highway 371 for about 36 miles or from Crownpoint, New Mexico, by traveling north on State Highway 371 for about 46 miles. An unsigned gravel road, known as the old State Highway 371 alignment forks from State Highway 371 just to the north and south of the BWA. This road is aligned from north to south intersecting the Gateway Wash, the most popular entrance point into the area.

Size and Boundary Description

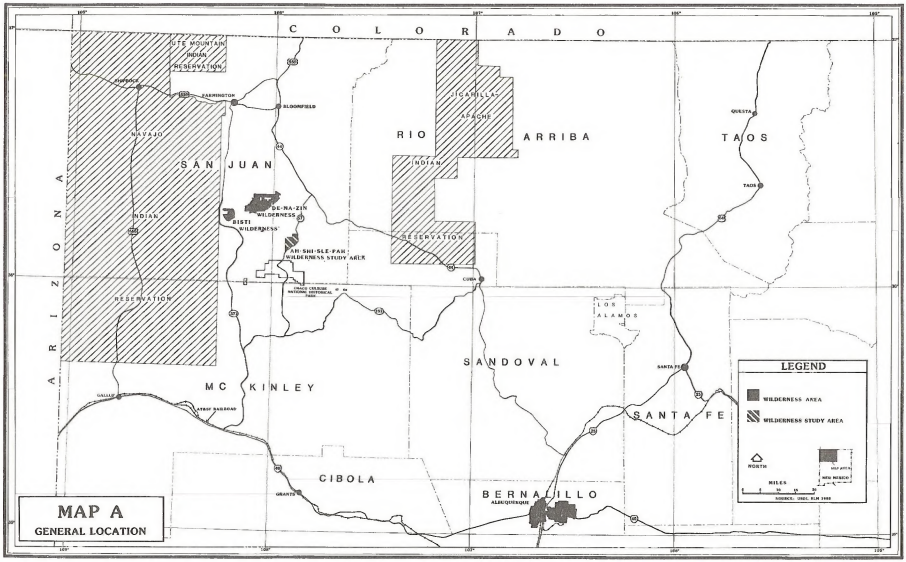
The BWA consists of 3,968 acres of Federal land administered by the BLM. The eastern boundary from its most northern point follows a section line south until it intersects the southern boundary. The southern boundary follows a section line west for about one-quarter mile and then a road right-of-way (100 feet offset from centerline) for about a mile intersecting a powerline right-of-way. The boundary continues west northwest along the powerline rightof-way (30 feet offset from centerline) for about one mile interrupted by a brief excursion along the northeast section line of T.23N., R.13W., Section 8. Then it jogs northwest for one mile until it intersects the southern section line of T.24N., R.13W., Section 32. The boundary continues east, north, and west around Section 32 until it intersects the old State Highway 371 right-of-way (100 feet offset from centerline). It continues north to the half section line of Section 30, T.24N., R.13W., which is the northwest corner of the BWA. The boundary continues east for about two and one-half miles to the center of Section 27. The boundary turns south for one-quarter mile and then east for the same distance along section lines until joining the eastern boundary completing the description. Refer to Appendix B for a complete legal description of the BWA (refer to Map B).

Unique Attributes

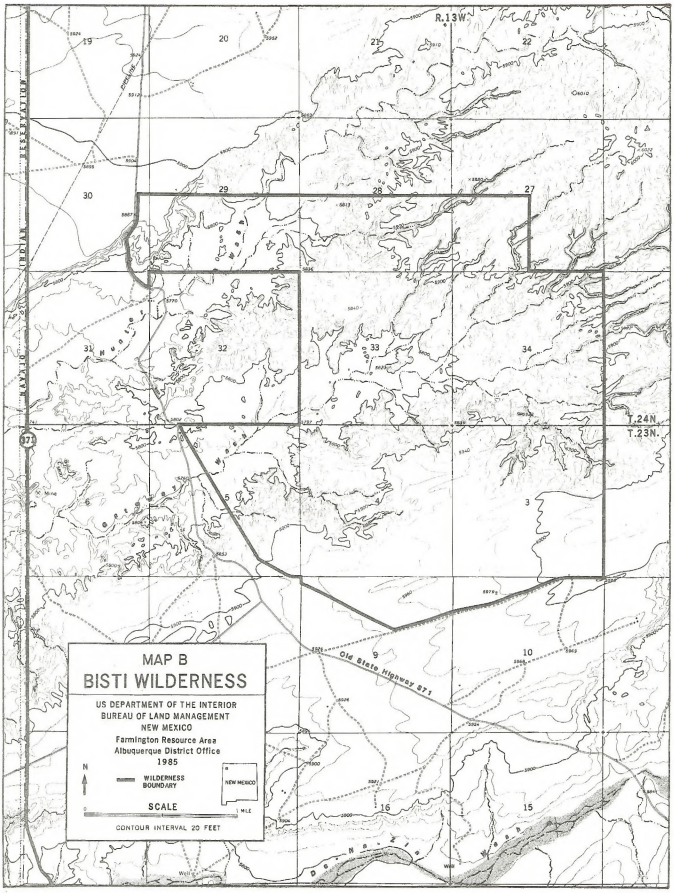
One of the primary attractions of the BWA is the high scenic values resulting from the unusual geologic formations (toadstools, hoodoos and spires)(refer to cover photo). These have been created by the weathering of interbedded shales, sandstone and coal with occasional caps of shale, sandstone or iron concretions. These formations occur in uncommon concentrations. The badlands also display dinosaur, plant, mammal and other reptilian fossils and, petrified logs of which some are exposed on the surface.

General Management Situation

The BWA is managed by the Bureau of Land Management, Albuquerque District, Farmington Resource Area, New Mexico. Planning and management efforts have received widespread interest and input from BLM specialists, volunteers, the general public and special interest groups. This wilderness management plan will be referenced in the Resource Management Plan which is a comprehensive land use plan for the entire Farmington Resource Area, scheduled for completion in 1988.



MAP A
GENERAL LOCATION


R.13W.
T.24N.
T.23N.
Old State Highway 371
MAP B
BISTI WILDERNESS
US DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
NEW MEXICO
Farmington Resource Area
Albuquerque District Office
1985
N
WILDERNESS BOUNDARY
NEW MEXICO
SCALE
MILE
CONTOUR INTERVAL 20 FEET

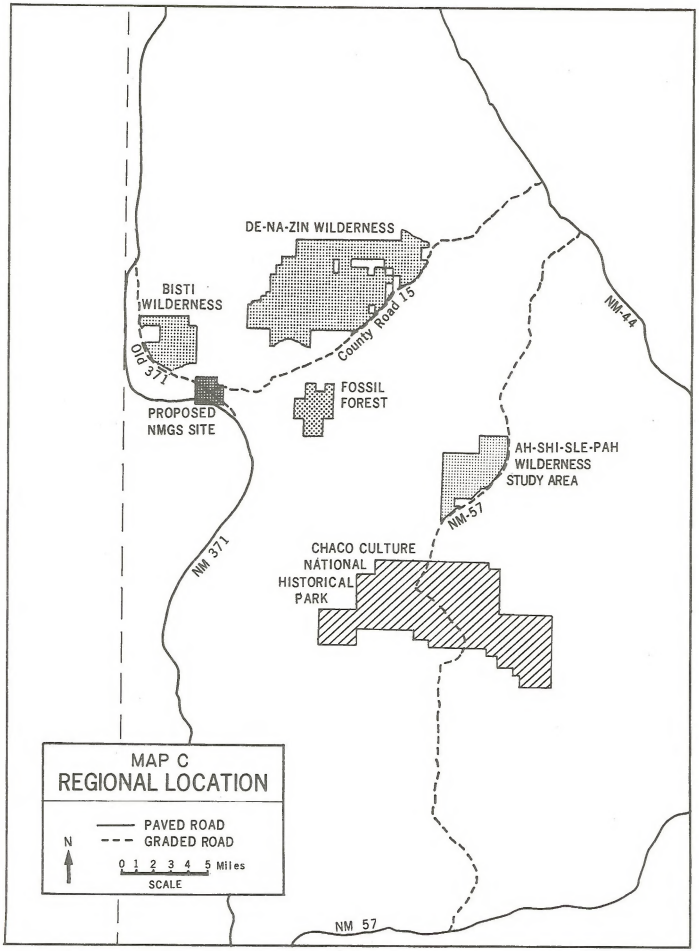
The BWA is relatively small (3,968 acres) compared to most in the National Wilderness Preservation System. Therefore, a general concern is the level of cumulative impacts from inside and outside influences. The combined impacts from human and technological influences may act to degrade and impair the area's wilderness character. Inside influences such as developments or removal of resources would degrade the characteristics that existed at the time of wilderness designation. Outside influences include visual and audible impacts from aircraft, noise and dust from the Gateway Coal Mine and from coal-hauling trucks and other vehicles utilizing old State Highway 371. Combined with recreational, scientific and nonconforming but acceptable uses (i.e., grazing), cumulative impacts to the BWA are of great concern.

Adjacent land uses include stripmining for coal (Sunbelt Mining Company's Gateway and De-na-zin Coal Mines), vehicle use on old State Highway 371 and livestock grazing by Navajo permittees. There is also potential that Preference Right Lease Applications could be leased for coal production. The site for the proposed New Mexico Generating Station is located in the general area (refer to Map C).

Nearby areas under special management by the Federal Government include the De-na-zin Wilderness, Chaco Culture National Historical Park, the Fossil Forest Research Natural Area and the Ah-shi-sle-pah Wilderness Study Area (refer to Map C).

Within the BWA there exists unauthorized uses such as motorized vehicles and trash dumping that require preventative and reclamation efforts. Current authorized uses include livestock grazing, recreation and scientific study.

An effort is also under way to adjust the BWA boundary to exclude a vehicle route, an unauthorized occupancy and a windmill. Congress may have to determine the feasibility of this boundary adjustment, which would exclude approximately 170 acres along the BWA southern boundary.


DE-NA-ZIN WILDERNESS
BISTI WILDERNESS
County Road 15
Old 371
NM-44
FOSSIL FOREST
PROPOSED NMGS SITE
AH-SHI-SLE-PAH WILDERNESS STUDY AREA
NM-57
NM 371
CHACO CULTURE NATIONAL HISTORICAL PARK
MAP C
REGIONAL LOCATION
PAVED ROAD
GRADED ROAD
N
0 1 2 3 4 5 Miles
SCALE
NM 57

PART II

WILDERNESS MANAGEMENT DIRECTION

Wilderness Management Philosophy

The BWA is designated primarily for permanent long-term protection and preservation of its natural character and, secondly, for public enjoyment as wilderness. It is the position of the BLM, consistent with legislation and national guidance, to establish an overall philosophy or mission for the administration of the BWA in order to supplement national goals and policy.

Overall BLM wilderness management philosophy is to allow the natural ecological cycles, interrelationships, functions, processes and environmental conditions of the wilderness resource to operate freely with as little human and technological influence as possible.

It is recognized that legislative acceptable uses such as primitive recreation, scientific and educational studies, historical and conservation purposes, livestock grazing and mineral activities are legitimate uses, however, they will not be encouraged or stimulated by promotion or advertisement. If these uses are justified they may be authorized on a case-by-case basis after analysis in an environmental assessment in order to mitigate impacts to the wilderness resource. If these uses are authorized, the minimum tool concept will be applied and the method selected will be the least degrading and disruptive to the wilderness resource.

The BWA is not an island unto itself and may be affected by indirect human influences that can severely impact ecological energy flow. More direct human-caused impacts such as rangeland developments or removal of mineral resources expedite unnatural changes in the wilderness resource.

It is recognized that some action will be needed to reclaim existing unnatural conditions caused by past human disturbance. This may allow the present wilderness resource to return to a condition that will encourage ecological processes to proceed in a dynamic natural state with human influence having minimal effects.

Wilderness Management Goals

Wilderness management goals have been established to obtain bureauwide consistency in the BLM wilderness management program. The following broadly stated goals apply to all BLM-administered wilderness areas (BLM Manual 8560):

To provide for the long-term protection and preservation of the area's wilderness character under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired;

To manage the wilderness area for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and human use;

To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily

or permanently. Management will seek to preserve spontaneity of use and as much freedom from regulation as possible; and

To manage nonconforming but accepted uses permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Nonconforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

Wilderness Management Objectives

Written objectives are presented here to clearly identify the desired conditions that the BLM is striving to achieve in the BWA. The objectives comply with the goals stated in the previous section.

Managerial Elements

The ADMINISTRATION objective is to conduct the necessary administrative activities to the extent consistent with wilderness philosophy, goals, objectives and this management plan in order to preserve, protect and restore the integrity of the wilderness resource.

The FIRE management objectives are to allow fire to return to its natural role and to exert its effects on the wilderness resource without endangering public health, safety or values; to use suppression techniques which result in the least possible evidence of human activity; and to develop a fire protection strategy that achieves wilderness management objectives at the least cost.

The INFORMATION AND EDUCATION objective is to provide visitors with an understanding and appreciation of wilderness values and the proper use and care of natural resources in a manner that will leave them unimpaired for future generations.

The SCIENTIFIC STUDY AND DATA COLLECTION objective is to allow research to occur as long as it is conducted in such a manner to protect and preserve the wilderness character in its natural condition subject to natural ecological processes while complying with BLM policy and regulations.

Environmental Elements

The CULTURAL RESOURCES objective is to protect and preserve cultural resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources that must be managed in compliance with Federal and State laws and BLM policy.

The LIVESTOCK OPERATIONS objective is to allow grazing use to continue subject to wilderness regulations and to maintain or upgrade the existing vegetative condition and trend.

The MINERAL RESOURCES management objective is to prevent unnecessary and undue degradation of the area's wilderness character when mineral lessees exercise their valid existing rights and to allow no new mineral development after valid existing rights expire.

The NATURALNESS objective is to reclaim the effects of authorized and unauthorized uses that have occurred within the last 50 years, and maintain the area free from new structures and improvements (except for those necessary to protect the wilderness resource, public health and safety, and to recognize valid existing rights).

The PALEONTOLOGICAL RESOURCE objective is to protect and preserve paleontological resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources which must be managed in compliance with Federal and State laws and BLM policy.

The RECREATION AND SCENIC QUALITY objectives are to allow historical patterns of primitive recreation to continue in their traditional fashion unless they degrade wilderness values and to provide for public recreation dependent upon a wilderness setting in a manner consistent with the preservation of an enduring resource of wilderness, characterized by naturalness, and outstanding

opportunities for solitude and natural visual enjoyment of the BWA.

The WILDLIFE management objectives are to preserve and protect crucial habitats for wildlife (particularly nesting raptors) in their natural condition while providing minimal restriction to visitor use and access and to allow natural ecological succession of wildlife populations so long as they do not threaten resource and human values outside the BWA.

PART III

WILDERNESS MANAGEMENT PROGRAM

The major wilderness elements identified in this part represent the significant uses, resources and management concerns of the BWA. The elements are arranged under managerial and environmental headings. Each element repeats the applicable management objective and describes the current situation, assumptions, management policies and prescribed actions. The current situation section describes the existing resource condition including problems, trends and uses. The assumption section explains the specialists' future expectations based on the current situation. Management policies seek to provide guidance and administrative direction for the prescribed management actions. The policies do not attempt to encompass or address all possible future management actions. If an unforeseen situation occurs, the management plan may need to be revised and the BLM Manual 8560 will guide the direction for the proposed management action. Revisions to the plan will be subject to public review and State Director approval. General policy and regulations are not always restated here as specific policy, however, they still apply. For the most part, only new and redefined policies to fit a particular situation are addressed. The management actions prescribed are the action steps to be taken once the plan is approved. They are the implementation steps. Management actions can be tracked back through the process by looking back to the current situation which has called for some action.

MANAGERIAL ELEMENTS

ADMINISTRATION

Management Objectives

The ADMINISTRATION objective is to conduct the necessary administrative activities to the extent consistent with wilderness philosophy, goals, objectives and this management plan in order to preserve, protect and restore the integrity of the wilderness resource.

Current Situation

The BWA is directly administered by the BLM Farmington Resource Area under the responsibility of the Area Manager and the technical supervision of the wilderness coordinator. One BLM staff member has acted as wilderness coordinator since wilderness designation and approximately 12 volunteers have monitored the BWA via patrols.

Administrative activities have included scheduled volunteer patrols, tours, a cadastral team survey and random field work by specialists. A cadastral team has surveyed and posted wilderness boundary signs on fence posts at most section corners, along rights-of-way and at access points where they intersect the BWA boundary.

Vehicle radio communication from the BWA boundary to the FRA office is adequate. Radio shadows could make long-range handheld radio communication from within the BWA to the FRA office a problem in the case of search and rescue or other emergencies. To date, no request has been received for search and rescue operations.

No incidents involving visitor health and safety have been reported. Also no known hazards or dangerous natural or human-caused conditions occur that are not inherent to wilderness and this arid badland/semi-desert environment.

Law-enforcement problems have occurred in stopping trespass violations and halting repeat offenders. This is considered a serious problem due to the lack of enforcement

presence and attention to prevent unauthorized activities.

An administrative closure of 1,360 acres within the BWA known as the Bisti Badlands (refer to Map D) was enacted in 1978. This closure prohibited motorized vehicle access and the collection of petrified wood (refer to the Federal Register June 5, 1978). The entire BWA is now closed to motorized vehicles as a result of wilderness designation.

Assumptions

Increased management attention and public awareness of this area have revealed various problems that might dictate the need for more intensive on-site management, including intensive patrol and monitoring. Personal contact by informed personnel and volunteers may be the most effective means of influencing user behavior.

Challenge, natural hazards, personal risk, an element of danger and the lack of modern conveniences are integral parts of the wilderness experience.

Unauthorized activities could continue if vehicle access is not restricted and other preventative measures are not taken.

Management Policies

Administrative use of motorized vehicles, mechanized equipment or facilities will not be permitted by the FRA Manager except upon ustification for fire suppression, search and rescue operations and in emergencies that require protecting the wilderness resource.

Visitor risks associated with adverse weather conditions, isolation, physical environmental hazards, and lack of rapid communication, conveniences and motorized travel are an integral part of the wilderness and will not be eliminated or minimized.

Violations that impair the wilderness resource or do not comply with BLM policy and this management plan will be aggressively investigated. Appropriate actions will be pursued.

Patrol and surveillance operations will be continued to preserve and protect wilderness resources.

Search and rescue operations will be assisted by the BLM with costs assessed to the requesting party.

Acquisition of adjacent lands will be pursued if it will increase the manageability of the BWA.

Administrative wilderness boundary signs will be monitored, maintained and replaced according to the Albuquerque District Sign Plan.

Any management or proposed action not addressed in this plan will be addressed in an environmental assessment.

A permit must be carried by permittee while in the BWA for uses requiring authorization.

The FRA wilderness coordinator will use the Visual Impact Evaluation System for measuring the visual limits of acceptable change.

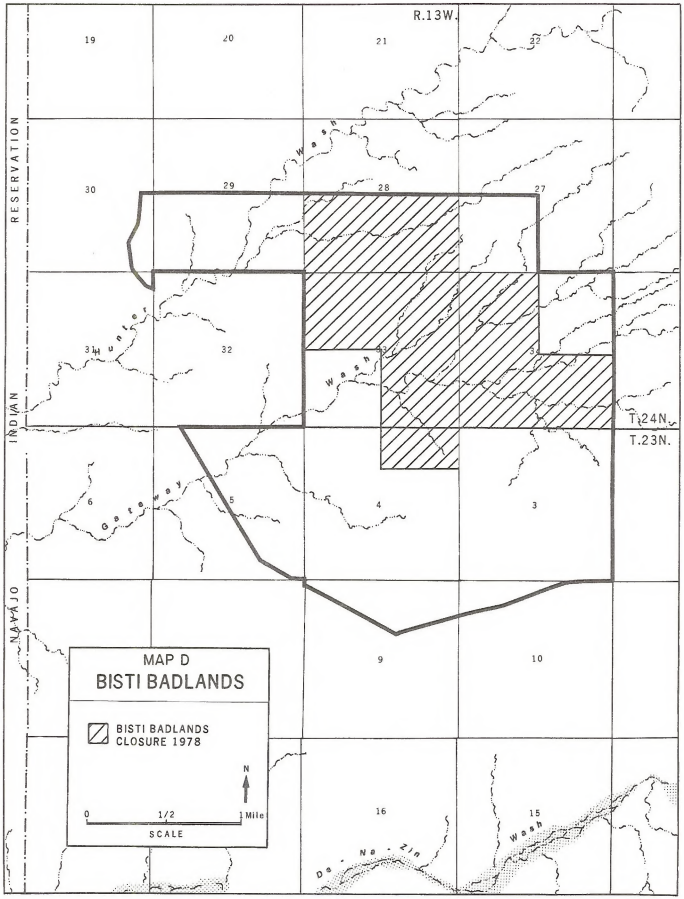
In addition to National Environmental Policy Act requirements, each environmental assessment will include:

-- analysis on specific effects of the proposed action on natural ecological processes, naturalness, solitude and primitive recreation;

-- analysis of the relationship of human influences and the wilderness resource;

-- analysis of the spectrum of ways and means of each alternative, including those tools and equipment used before motor vehicles and modern techology were available; and

-- analysis of the cumulative impacts of all human influences occurring within and outside the BWA on the wilderness characteristics of naturalness, solitude, primitive recreation and other special or supplemental values.


R.13W.
T.24N.
T.23N.
NAVAJO INDIAN RESERVATION
19
20
21
22
30
29
28
27
31
32
33
34
6
5
4
3
9
10
16
15
Hunter Wash
Gateway Wash
De - Na - Zin Wash
MAP D
BISTI BADLANDS
BISTI BADLANDS CLOSURE 1978
N
0
1/2
1 Mile
SCALE

Standard operating procedures will include:

-- a 30-day public review period and field tour, if requested by interested citizens;

-- non-disclosure of sensitive wildlife, cultural and paleontological resource data;

-- a reclamation plan to include the Visual Impact Evaluation System as the management tool to measure the effectiveness of rehabilitation;

-- project clearances from cultural, paleontological, wildlife, and recreation specialists for compliance with laws and policies with final written approval by the FRA Manager; and

-- performance or surety bonds.

Management Actions

The BLM-FRA chief of operations will pursue a cooperative agreement with the New Mexico State Police for search and rescue operations. A search and rescue plan will be completed (FY 88) and amended to this Plan.

A patrol and monitoring record will be maintained by the wilderness coordinator (FY 85). This will include documentation of all authorized and unauthorized activities as per Instruction Memorandum No., NM-85-185.

Acquisition of State-owned Section 32, T.24N., R.13W., presently leased to Sunbelt Mining Company, will be pursued by a FRA realty specialist after reclamation requirements are satisfied.

FIRE

Management Objectives

The FIRE management objectives are to allow fire to return to its natural role and to exert its effects on the wilderness resource without endangering public health, safety or values; to use suppression techniques which result in the least possible evidence of human activity; and to develop a fire protection strategy that achieves wilderness management objectives at the least cost.

Current Situation

No historical record of fires within the BWA exists, mainly because most of the area is badlands with sparse vegetation. Brushfires are unlikely except in the southern one-third of the BWA. Due to the exposed coal deposits within the BWA and on adjacent lands, a coal bed or spoilbank fire is possible, but unlikely.

Assumption

Because of the lack of past fire history within the BWA, the assumption is that fires will be of minimal occurrence in the future.

Management Policies

All fires will be controlled to prevent loss of human life or property within the BWA and to prevent the spread of fire to areas outside of the BWA where life, resources, or property may be threatened.

Human-caused fires will be prevented and/or controlled unless the fire meets the wilderness fire management objectives. Suppression will be accomplished by the minimum means and with the least use of motorized equipment necessary to control the fire.

Use of motorized vehicles and mechanized equipment for fire suppression must be approved by the FRA Manager.

Management Action

A fire management plan will be identified in the FY 87 Annual Work Plan and written by November 30, 1987 by the FRA chief of operations to be consistent with this management plan and the BLM Manuals 8560 and 9210. This plan will address situational conditions necessary for various levels of fire suppression response, fire regimes and predicted fire behavior.

INFORMATION AND EDUCATION (I&E)

Management Objective

The INFORMATION AND EDUCATION objective is to provide visitors with an understanding and appreciation of wilderness values and the proper use and care of natural resources in a manner that will leave them unimpaired for future generations.

Current Situation

Presently, on-site I&E consists of a cultural antiquities sign that identifies the general vicinity of a historic site and wilderness boundary signs that identify the BWA exterior boundaries.

Media coverage has included television commercials, radio coverage, and newspaper and magazine articles that have disseminated information concerning the BWA location, special events, planning and management efforts and general information about the area. Technical publications have sought to share scientific data and research with concerned specialists. The Farmington Chamber of Commerce and other private concerns have actively promoted and advertised the BWA including bus tours.

Public relation efforts have included speaking engagements at the request of several organizations in Farmington, field tours of the BWA and the use of volunteers. Displays with pictures and narrative have been utilized to inform the public of the BLM wilderness program and to educate the public about wilderness values. Other public communication efforts have included color map and informational brochures, available blue line topographic maps and office telephone and personal conversations.

Bureau I&E efforts include memos, newsletters, orientation programs, and circulation of contemporary research publications.

Assumptions

The public will continue to request information concerning the BWA.

Effective and timely I&E will be a key management tool in directing user behavior which minimizes resource impacts and encourages compliance with this management plan.

Materials and techniques for I&E will be placed outside the BWA except if they are needed within to protect the wilderness resource or provide for public safety.

Management Policies

The BLM will make general information available to the public without advertising or promoting the use of wilderness.

The BLM will divert use not dependent on wilderness to other areas through I&E efforts.

Voluntary visitor compliance with policy and this management plan will be sought through I&E as an initial and on-going process. A more direct method of regulating and restricting uses will be applied if all else fails. Regulatory or administrative signing, if needed within the BWA, will be the minimum necessary.

All wilderness publications and media presentations will describe the inherent dangers of a wilderness area away from the conveniences of modern technology and any other known dangerous conditions. Visitor assumption of risk and no trace/minimum impact concept statements will also be incorporated.

I&E efforts (i.e. maps, brochures, displays) will be periodically updated to keep them current.

The BLM will educate and inform the general public and users of specific resource needs that require special consideration due to fragile or endangered resources, seasonal, ecological, life cycle and environmental changes.

Management Actions

The FRA wilderness coordinator, with cartographic and public relation support from the Albuquerque District Office, will update the 1981 Bisti map/brochure to reflect current information and conditions (FY 86).

Additional text and other media will include summaries of: wildlife - to divert users away from nesting areas, especially during the nesting season, without calling undue attention or pointing out exact nest locations; cultural resources - to outline prehistoric and historic use and statements of legislation protecting archaeological sites; paleontological resources - to identify the scientific significance of fossils, and the laws and penalties to protect them; geological resources - to mention that features such as hoodoos, spires, toadstools, and other formations are fragile because of constant erosional forces, so climbing or otherwise disturbing them will destroy this unique and irreplaceable resource; regulations concerning the restricted area closure and policy on rockhounding; wilderness management regulations as published in the Federal Register February 25, 1985; and dangers of badlands - piping, quicksand, unstable soils and flash flooding; and wise use of general public lands and natural resources.

The wilderness coordinator will conduct an all-employee orientation, and will prepare an orientation pamphlet for new employees, temporary employees and volunteers to familiarize them with wilderness philosophy, goals, objectives, policies, and this management plan (FY 86).

The recreation coordinator will develop an I&E display to be located at the proposed parking facility in T.23N., R.13W., Section 5. This display will include information to seek compliance with management objectives and policies of this Plan (FY 88). Specific information will be provided on cultural, paleontological, geological, wildlife and wilderness resources.

An entrance sign will be placed near Gateway Wash to identify the access point to the BWA (FY 86).

SCIENTIFIC STUDY AND DATA COLLECTION

Management Objective

The SCIENTIFIC STUDY AND DATA COLLECTION objective is to allow research to occur as long as it is conducted in such a manner to protect and preserve the wilderness character in its natural condition subject to natural ecological processes while complying with BLM policy and regulations.

Current Situation

The BWA contains opportunities for scientific study and data collection in an outdoor laboratory setting for those projects requiring a dynamic natural environment. There are a number of projects that are currently authorized within the BWA. The FRA wildlife biologist collects data annually on raptors and their habitat. The FRA recreation coordinator collects visitor use data. A University of New Mexico doctoral candidate is utilizing the "Limits of Acceptable Change" system for monitoring and evaluating visual impacts to the natural environment. Paleontologists have studied plant and animal fossil material. Range conservationists are presently monitoring vegetative conditions.

Of great concern to those undertaking some level of research is the disturbance that has occurred to resources under study. Site vandalism, removal of natural resource material, and other visitor influences have created problems.

Assumptions

Permit applications for scientific study in the BWA may continue to be received.

The demand for basic research in the BWA may increase due to the opportunities provided by a legislatively protected natural area which is otherwise limited in this region.

Management Policies

Scientific study and data collection will not include any collection of materials, excavations, stabilization or interpretive activities except on a case-by-case basis with prior written authorization.

All projects must be conducted without the use of motorized vehicles, mechanized equipment or facilities unless expressly authorized when no other alternative exists.

If such use is approved it must be the minimum necessary and must not degrade the wilderness resource.

All requests for scientific study and data collection will be analyzed in an environmental assessment. All proposals for scientific study will:

-- provide information on specific location, maps, timeframes, detailed description of proposed action and a reclamation plan;

-- provide for detailed recordation, reports, care of specimens, and availability of information to the public, specialists, scientists and institutions; and

-- stipulate that any specimen removed from the BWA will be placed in an institution within the State of New Mexico.

Analysis criteria will be:

-- does it further the management of wilderness and seek to explain the wilderness phenomena through studies of the natural environment, visitor use capacities, social assessments, user impacts, use patterns, use levels and user behavior;

-- does it limit the experience of the wilderness visitor;

-- does it conflict with wilderness philosophy, goals, objectives and this management plan;

-- does it have high interest and support from interested individuals; and

-- does it show a unique and outstanding potential to add new scientific information to that which can be obtained outside the BWA.

Unauthorized material collection of wilderness resources will be discouraged through information and education efforts.

Permanent or temporary study plots or structures must exist in an inconspicuous manner and not be visually evident to the casual observer.

Provide administrative aid (staff time and funding) when possible and process requests for projects within 90 days of receipt.

Locality information will be kept confidential when possible.

Management Action

No management actions will be prescribed. However, management actions involving scientific study and data collection can be found in the Management Action section of each applicable wilderness element in Part III.

ENVIRONMENTAL ELEMENTS

CULTURAL RESOURCES

Management Objective

The CULTURAL RESOURCES objective is to protect and preserve cultural resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources that must be managed in compliance with Federal and State laws and BLM policy.

Current Situation

Three different surveys have been completed identifying four cultural sites. Approximately 1,500 acres (37 percent) of the BWA were inventoried in the mid to late-1970s and no sites were identified. This inventory is not viewed as contributing reliable data to the cultural resource program. A later survey (Vogler, et al. 1982) covered about 40 acres and identified three sites. A fourth site was recorded around 1960 by the San Juan Archeological Society. Of the four recorded sites, two have been determined eligible to the National Register of Historic Places. These eligible sites are lithic scatters that have not been assigned to a specific period of occupation. The remaining two sites were determined ineligible. One antiquity sign is located in T.24N., R.13W., Section 34 as a general location marker for educational purposes.

Although few cultural sites have been identified within the BWA, numerous sites from the Archaic Period (approximately 6000 B.C. to A.D. 100) have been identified in inventories conducted less than a mile from the BWA boundary. Site density in surrounding areas is about one site for every 20 to 25 acres. Although soils and topography may vary and result in a lower site density, evidence of prehistoric and historic use is still expected. Predicted site types include Archaic lithic scatters, sites containing ceramics and chipped stone from later time periods, Navajo structures and features from the Historic Period, and Navajo gravesites and other sacred places such as gathering areas and offering points. Sacred sites may include various features such as rock formations, buttes, mesas, and crevices; other man-made features such as cists, cairns, ceremonial hunting and trapping pits; and sites where curing and other religious ceremonies have been performed. No project-specific work has been done to identify either sacred, religious, spiritual or burial sites. However, a gathering area for a white clay-like mineral used as a ceremonial paint and as an ingredient in food made with wild wolfberries has been identified (Condie 1982). It should be noted that both gravesites and sacred areas are sensitive aspects of Navajo culture, and informants are reluctant to discuss these issues.

Inventory in the BWA has low priority relative to established FRA cultural resource programs. The resource does not appear to be threatened by any immediate destructive forces any more than other sites in the San Juan Basin. The sites in the BWA are, in fact, more protected than the majority of sites in the basin because of restrictions to vehicle access and energy development.

Assumptions

If visitor use increases, it may result in increased probability that site contents will be disturbed or removed as a result of artifact collection. The expected capacity of cultural properties to withstand impacts as a result of recreational use is moderate due to the fact that predicted site types have low visibility.

Because few of the expected sites include obvious features and structural remains, it is unlikely that vandalism punishable under the Archeological Resources Protection Act of 1979 would occur. However, many of these sites may be sensitive to natural impacts such as erosion.

Management Policies

Cultural resources will be subject to the forces of nature, and study or management will not include excavation, stabilization, or interpretive activities except on a case-by-case basis with prior written authorization.

Inventory will be permitted as necessary to record, evaluate and document site condition.

Specific site locations will not be marked or identified for the public.

Graves will be managed and protected as cultural resource sites.

Gathering of renewable resources such as plants and fruits and nonrenewable colored sands for ceremonial and medicinal purposes will be allowed to continue. Vehicle access, however, will be prohibited.

All information and education media will address the sensitivity issues of cultural resources.

Management Actions

The existing antiquity sign in T.24N., R.13W., Section 34 will be removed by a FRA archaeologist (FY 86).

Vandalism and other user impacts to prehistoric and historic sites will be discouraged by posting antiquities signs along the BWA boundaries and at popular entrance points. Periodic patrol and monitoring of known sites will be performed by the FRA archeologist (FY 86).

LIVESTOCK OPERATIONS

Management Objective

The LIVESTOCK OPERATIONS objective is to allow grazing use to continue subject to wilderness regulations and to maintain or upgrade the existing vegetative condition and trend.

Current Situation

Livestock grazing within the BWA is permitted to occur within Range Units 7, 10, 11, 14 and 15 of the Bisti Community Allotment (No. 6008) which is administered by the Bureau of Indian Affairs through a cooperative agreement with the BLM (refer to Map E). Grazing privileges are leased to the Navajo Tribe under Section 15 of the Taylor Grazing Act (43 U.S.C. 315, 315h, 135n, 319a) and are then subleased to individual permittees. It is common to see permittees on horseback throughout the year tending herds of sheep, goats or horses within or near the BWA.

An Allotment Management Plan has not been developed. The Chaco Rangeland Inventory (1984) describes the range condition in the BWA permitted areas as fair to good and range trend as static based on the inventory of two range sites. Utilization and productivity evaluations will be made after additional monitoring is completed.

At the time of wilderness designation, 302 animal units per month were authorized on this allotment, however, actual use is unknown. Administrative problems have made it difficult to track the exact amount and type of use. Currently, the classes of livestock that are authorized are sheep, goats and horses. This problem is viewed as being significant in light of wilderness management. Accurate utilization figures are needed to assist in the analysis of vegetative evaluations which lead to adjustments in animal units per month.

Currently, no proposed range improvements are scheduled to be constructed in the BWA. A windmill (Job Description Report No. 1685) and associated facilities are the only rangeland improvements and are located in T.23N., R.13W., Section 10 NW1/4 NE1/4 NW1/4. The routine types of maintenance include: replacing the leathers every other year, replacing the checks about every five years, and greasing the gear box once a year. A proposed boundary change (described in the Administrative Element section page III-1) would eliminate this improvement from the BWA.

Problems had resulted because a permittee constructed an unauthorized corral in T.23N., R.13W., Section 3 SE1/4 SW1/4 SE1/4 which has since been dismantled and removed.

Assumptions

An Allotment Management Plan is not expected to be developed.

Some maintenance of the windmill may be needed including access by motor vehicle and heavy machinery. No requests for new range improvements are expected.

In order to better assess vegetation condition and trend in the BWA, continued monitoring of existing range sites and inventory of new range sites may be needed.

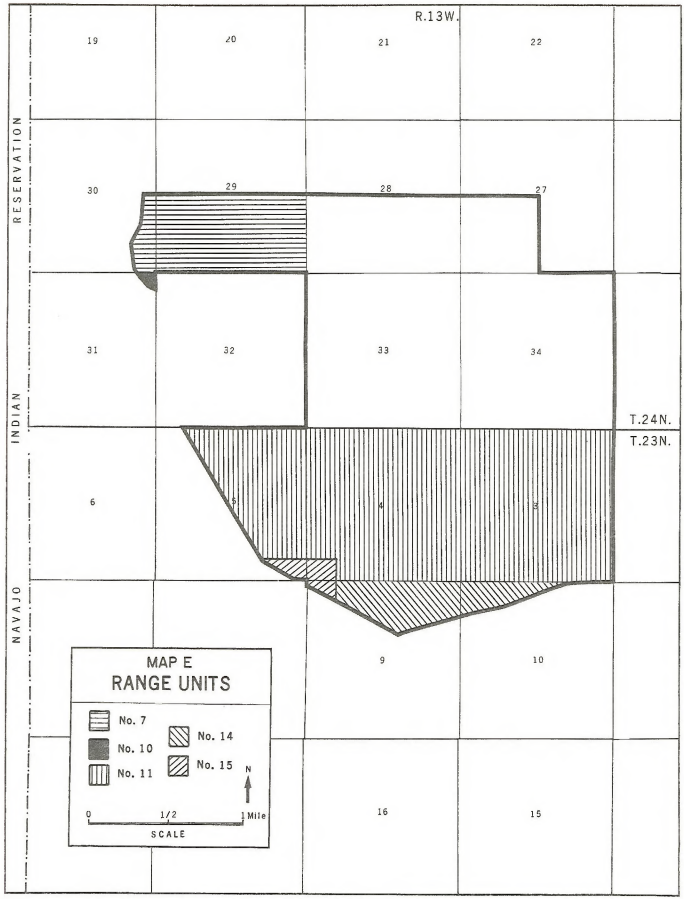
Consolidation of administrative responsibility for rangeland management may be needed to adequately manage livestock oeprations in the BWA.

Management Policies

Livestock grazing shall be permitted to continue at its current level subject to regulations necessary to meet the needs of the permittee, and the livestock operations objective (pending completion of the Farmington Resource Management Plan).

No curtailment of grazing permits or privileges shall occur simply because of wilderness designation. Any adjustment to the current grazing levels will be examined through rangeland studies and an environmental assessment.

Any use of motorized vehicles or mechanized equipment for range improvements or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INDIAN RESERVATION
NAVAJO
MAP E
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maintenance will be analyzed through an environmental assessment.

Any change in the overall management situation regarding rangeland operations will be assessed according to the BLM Manual 8560 and the Administrative Cooperative Agreement.

A minimum of one range site per Range Unit will be monitored annually to assess the vegetative condition and trend, determine utilization, gather data on actual use and evaluate the limits of acceptable change according to rangeland management procedures. The limits of acceptable change standards will be no less than the current situation.

New range improvements will be constructed with natural materials when possible, not require motorized vehicle access, and must benefit wilderness values.

Management Actions

The Cooperative Agreement for the "Land Administration of the Eastern Navajo Agency Administrative Area (Off-Navajo Reservation)" by the Navajo Tribe, the BLM, and the Bureau of Indian Affairs will be changed during the annual review (FY 88). The BLM will regain full administrative responsibility for the BWA regarding rangeland management.

A FRA range conservationist will develop a management/users guide for allottees that addresses:

-- expected motor vehicle and mechanical equipment needs;

-- expected emergency conditions (i.e., animal removal);

-- types of servicing and frequency of maintenance needs;

-- range improvement developments;

-- placement of supplemental feed;

-- describe the types and frequency of maintenance and servicing of range improvements in the past; and

-- utilization and vegetative condition and trend.

The guide will address the numerous ways and means to accomplish the above tasks including the way they were done before motor vehicles and modern technology were developed. A cost-benefit analysis will also be included and will be completed during FY 87.

Additional range sites (minimum of one per Range Unit) will be selected and inventoried during FY 86 to assist in monitoring vegetative condition and trend.

The FRA wilderness coordinator and a range conservationist will identify the rangeland limits of acceptable change indicators and standards (FY 86) and begin annual monitoring.

Two sheep-proof fencelines with gates will be constructed to manage livestock utilization of the Range Units in the BWA. Approximately one-half mile of fence will be constructed in the upland range portion along the east-west half section line of T.24N., R.13W., Section 29 and the old State Highway 371 right-of-way (FY 88). Approximately three miles of fence will be constructed along the southern exterior boundary between the east and west badland portions of the BWA (FY 89).

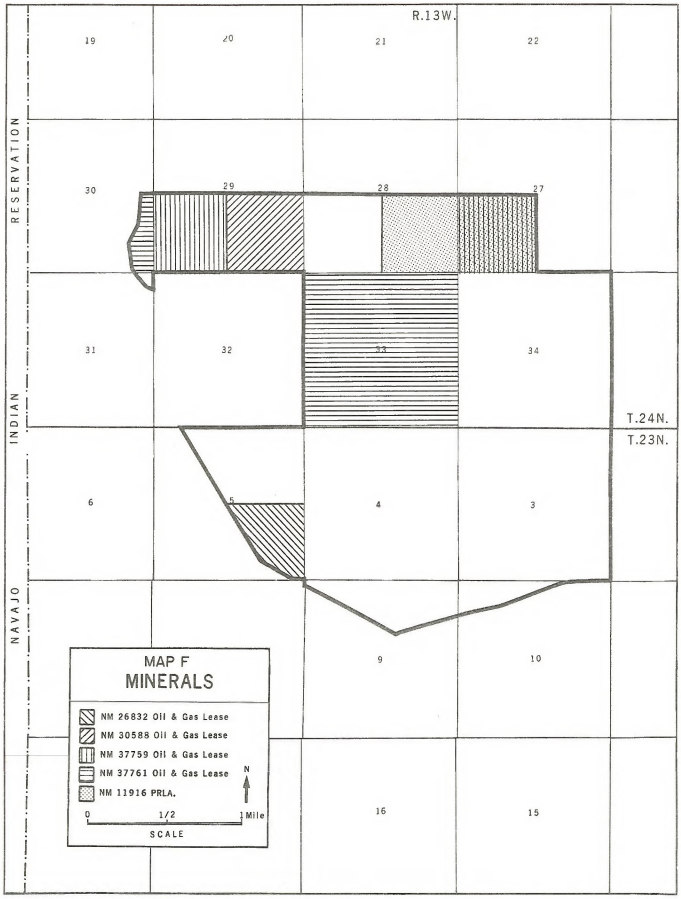
MINERAL RESOURCES

Management Objectives

The MINERAL RESOURCES management objective is to prevent unnecessary and undue degradation of the area's wilderness character when mineral lesses excercise their valid existing rights and to allow no new mineral development after valid existing rights expire.

Current Situation

Approximately 30 percent of the BWA surface is under oil and gas lease (refer to Map F). No wells have been drilled and there are no known geologic structures. Of the four leases within the BWA, the last will expire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INDIAN RESERVATION
NAVAJO
MAP F
MINERALS
NM 26832 Oil & Gas Lease
NM 30588 Oil & Gas Lease
NM 37759 Oil & Gas Lease
NM 37761 Oil & Gas Lease
NM 11916 PRLA.
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SCALE

on September 30, 1989 if oil or gas is not produced. The existing leases and their expiration dates are:

Lease NM-26832, expires November 30, 1985

Lease NM-30588, expires July 30, 1987

Lease NM-37759, expires September 30, 1989

Lease NM-37761, expires September 30, 1989

There are no existing coal leases in the BWA since previous leases have been exchanged. Approximately 320 acres of one coal Preference Right Lease Application (PRLA, No. 11916) extends into the BWA (refer to MAP F). No decision has been made as to whether the lease will be issued or not. If it is determined that the applicant has successfully proven that economical coal underlies the PRLA, the lease could be issued. In addition to surface and underground coal deposits in the BWA, adjacent existing mines and coal leases occur (Gateway Mine to the west and De-na-zin Mine to the south.) In addition the New Mexico coal-fired Generating Station is proposed to the south.

Significant occurrences of other minerals are not known to exist. All mining claims have been abandoned and invalidated and the BWA has been closed to claim location since October 30, 1984. There are no free use permits or sales of mineral materials existing in the BWA. The Master Title Plats have been changed to reflect the mineral withdrawal.

Assumption

Potential future oil and gas drilling activities are possible, but are considered unlikely.

The PRLA (No. 11916) will be processed, to determine whether it will be issued or denied.

Management Policies

In the event that a lease is issued for PRLA (No. 11916), every attempt to exchange the lease for an areas outside the BWA will be pursued.

No new oil and gas leases will be issued. Lessees will operate under mineral leasing laws and valid existing rights as contained in the lease including wilderness stipulations.

Operators with valid existing rights will abide by reasonable stipulations to protect the wilderness character and to prevent unnecessary or undue degradation. Operators will be allowed reasonable ingress and egress.

An environmental assessment will address each action and a 30-day public review period will apply. The following will be used as mitigating measures to be incorporated as stipulations in applications for a permit to drill:

-- all vehicle use will receive prior written approval from the FRA Manager;

-- any road will be the minimum necessary for ingress and egress;

-- all structures will receive prior approval and be designed to have the least impact on visitor wilderness experience;

-- low-form tanks will be painted in colors that blend with the environment;

-- wells located close to the exterior BWA boundary will use remote facilities located outside of the BWA;

-- automatic shut off controls will be installed on tanks and pipelines;

-- in order to avoid rutting of the terrain, drilling operations will not take place during periods of high precipitation;

-- trash and fluids produced during drilling and workover operations will be hauled out;

-- all production pits will be lined and have a leak-detection system;

-- fluids will be hauled out of the BWA when pits are full;

-- sites will be returned to as natural a contour as possible;

-- topsoil will be retained, if present, and revegetation with native seeds will be accomplished;

-- well sites will not cause accelerated erosion or hazards to visitors;

-- no wells will be drilled in raptor nesting areas between March 1 and July 1;

-- the wilderness coordinator will be contacted to attend the on-site pre-drill inspection;

-- site-specific stipulations may be added at that time;

-- monitoring will be performed by petroleum engineering technicians; and

-- use of inspection and enforcement standards will apply, as will the approved stipulations, as guidelines.

Management Action

Because no oil and gas or coal activity is ongoing, no management action will be prescribed. If a valid existing right to drill or mine is realized in the future, the policies above will guide implementation of the proposed action.

NATURALNESS

Management Objective

The NATURALNESS objective is to reclaim the effects of authorized and unauthorized uses that have occurred within the last 50 years, and maintain the area free from new structures and improvements (except for those necessary to protect the wilderness resource, public health and safety and to recognize valid existing rights).

Current Situation

There are a number of unauthorized uses in the BWA (refer to Map G). A dumpsite located in T.24N., R.13W., Sections 27, 28 and 29 along and below the bluffs contains scattered household trash, scrap metal and two car bodies. Scattered trash also exists along the southern boundary road in T.23N., R.13W., Sections 9 N1/2 and 10 N1/2. An unauthorized occupancy exists in T.23N., R.13W., Section 3 SW1/4 SE1/4 SE1/4 consisting of a home and a corral belonging to George Simpson. There have also been numerous reports of vehicular trespass near Gateway Wash T.23N., R.13W., Section 5 N1/2. An overhead powerline cuts through the BWA for about one-quarter mile in T.24N., R.13W., Sections 29 N1/2 NW1/4 SW1/4 and 30 N1/2 NE1/4 SE1/4.

An unauthorized route also cuts through the area in the general vicinity of the powerline and leads to an abandoned Navajo structure outside of the BWA.

Assumptions

Future unauthorized uses will need to be prevented and existing unauthorized uses will be reclaimed to restore the area's primitive character.

Vehicular trespass will continue without sufficient barriers to restrict access to the interior of the BWA.

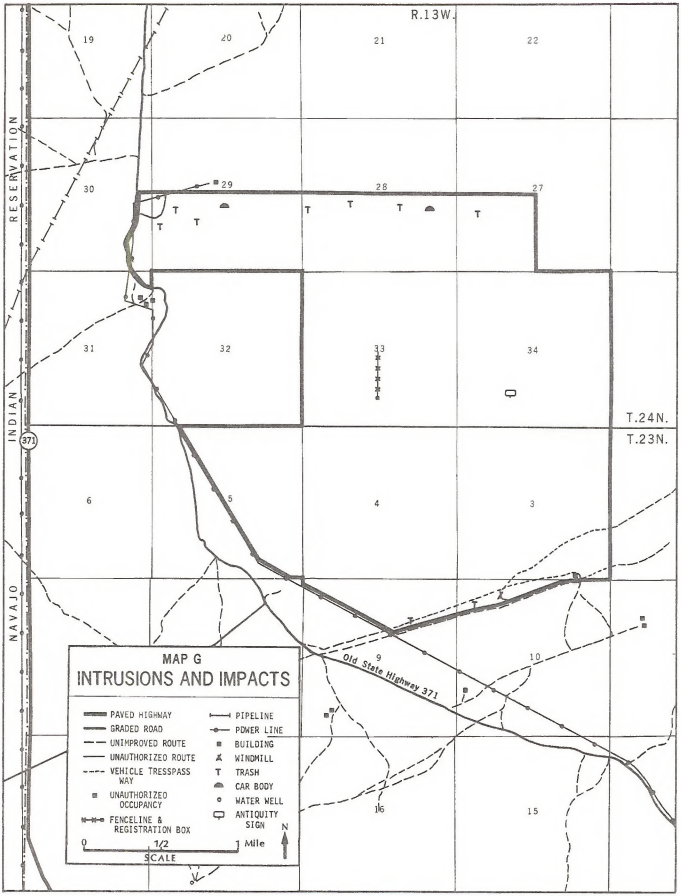
Trash dumps may continue to be used unless access is restricted.

Management Policies

All current and past unauthorized uses and their effects will be rehabilitated and restored to a natural condition. Preventative measures will be taken to prevent recurrence.

Fences or other barriers will be erected to control vehicular intrusion into the BWA at locations that are easily accessible.

Denuded areas resulting from human activity which cannot rehabilitate naturally in a reasonable period of time will be reclaimed, recontoured to natural slope, and reseeded with native plant species to establish satisfactory ground cover as existed prior to disturbance.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INDIAN RESERVATION
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Old State Highway 371
MAP G
INTRUSIONS AND IMPACTS
PAVED HIGHWAY
GRADED ROAD
UNIMPROVED ROUTE
UNAUTHORIZED ROUTE
VEHICLE TRESSPASS WAY
UNAUTHORIZED OCCUPANCY
FENCELINE & REGISTRATION BOX
PIPELINE
POWER LINE
BUILDING
WINDMILL
TRASH
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Management Actions

The FRA wilderness coordinator will prepare an environmental assessment for dismantling and removing the powerline and poles (FY 86). The access route will be blocked with fill dirt along old State Highway 371 and will be reclaimed (FY 86).

Trash will be picked up and removed by hand with the aid of volunteers. The cars will also be removed with supervision from the FRA wilderness coordinator (FY 86).

The FRA Manager will initiate actions to resolve the unauthorized occupancy through a life-estate lease or boundary adjustment (FY 86). All structures will be removed upon termination of the life-estate lease if this is the method of resolution. Until the situation is resolved, the occupant is authorized to use motorized vehicles on the vehicular route immediately south of the dwelling as depicted on MAP G. A boundary adjustment will be the first choice of resolution.

A fenceline will be constructed along the powerline right-of-way adjoining a topographic buffer near the Gateway Mine fence just east of the powerline on the T.24N. and T.23N. line and following the powerline south approximately three-quarters of a mile to another topographic buffer. This project will be completed in the summer (FY 86) under the supervision of the FRA wilderness coordinator. A built-in break in the fence will serve as a pedestrian entrance point to the BWA and will be located near the parking facility.

PALEONTOLOGICAL RESOURCES

Management Objective

The PALEONTOLOGICAL RESOURCE objective is to protect and preserve paleontological resources in their natural condition subject to natural ecological processes provided these processes do not adversely threaten significant resources which must be managed in compliance with Federal and State laws and BLM policy.

Current Situation

Past inventories in the BWA have identified hundreds of fossil localities. Perhaps the best known and most important inventory was completed in 1977 by Kues et al. Because of natural erosion much of the site-specific inventory data may no longer be accurate. Areas that have been shown to be productive, however, will continue to be important as they do not rely on isolated occurences of a particular specimen or specimens.

Past studies by the Universities of Kansas, Arizona and California at Berkeley have included excavations and collection of a dinosaur skull, turtle, and crocodile material. Other fossil material that has been identified include lizard, pelecypods, gastropods, petrified wood, carbonized plants, and other reptile material. Fossil materials identified in the BWA are considered to be common and more abundant in other areas.

For the purposes of this Plan, the BLM will define a "significant fossil" as one that meets one or more of the following criteria as determined by the Society of Vertebrate Paleontology:

-- complete (greater than 75%) skeleton(s)

-- skulls and/or articulated material

-- whole isolated bones

-- significant concentration of fragmentary but identifiable elements. In general, significant would be 40-50 elements of matrix or 10 fragments/square meter of surface.

Should the above definition differ from that adopted in the Final BLM paleontological regulations, then the latter will apply.

Of great concern to professionals is the negative impacts to the paleontological resource from natural elements and human influences. Natural erosional forces disturb the structural integrity of fossils destroying potential important scientific data.

Human influences such as vandalism and indiscriminate collection of materials also negatively impacts the resource. It is suspected that amateur fossil collecting does occur. Another concern is the restriction to vehicle access and mechanized equipment imposed by the Wilderness Act of 1964. This concern is partially mitigated by the fact that similar geological formations occur outside of designated wilderness where vehicle access is not prohibited. There is only one current permit for paleontological study in the BWA.

Assumptions

Amateurs may continue to indiscriminately remove fossil materials.

Most scientific study of paleontological resources will require collection of fossils.

Without stabilization and/or collection, exposed paleontological materials will continue to weather and erode.

Management Policies

There will be no stabilization, collection of materials, excavation or interpretive activities involving paleontological resources that do not meet the criteria of "significant fossils".

Each permit application that involves salvaging a paleontological site will be analyzed through an environmental assessment.

Any paleontological material removed from the BWA will be reposited in an institution within the State of New Mexico.

Information and education efforts will discuss the sensitivity issues of paleontological resources.

Unauthorized collection of paleontological resources will be discouraged.

Management policies identified in the Scientific Study and Data Collection section in Part III of this document will be applied to scientific study of paleontological resources.

Inventory will be permitted as necessary to record, evaluate, and document site conditions.

Management Actions

The FRA paleontologist will facilitate the development of an advisory committee to review permit applications for paleontological investigations in the BWA and make recommendations for approval/disapproval (FY 86). The advisory committee will be made up of qualified vertebrate paleontologists as determined by the BLM.

The FRA paleontologist will write a Federal Register Notice to close the BWA to collection of paleontological resources, including petrified wood, without a permit (FY 86).

RECREATION AND SCENIC QUALITY

Management Objectives

The RECREATION AND SCENIC QUALITY objectives are to allow historical patterns of primitive recreation to continue in their traditional fashion unless they degrade wilderness values and to provide for public recreation dependent upon a wilderness setting in a manner consistent with the preservation of an enduring resource of wilderness, characterized by naturalness, and outstanding opportunities for solitude and natural visual enjoyment of the BWA.

Current Situation

The historical patterns of primitive recreation have been hiking and concentrated day use occurring along Gateway Wash according to reports by BLM staff and special interest groups. There are no established trails due to constant erosional forces erasing most visible signs of travel. Outstanding opportunities for solitude and primitive recreation are available throughout the BWA. Adjacent stripmining impacts, assessed to be temporary affect those opportunities during some portions of each day and will likely continue for the life of the Gateway Coal Mine (estimated 10 year life). Solitude and visibility are also impacted to some degree

along old State Highway 371 where heavy and frequent use occurs from coal-hauling trucks and other vehicles. Recreation potential is derived primarily from the unusual nature of the topography and scenery associated with the concentrations of geological formations. The major washes and tributaries offer a unique and intriguing visual experience. The types of recreation activities that occur include hiking, sightseeing and photography. The potential for observing fossils while exploring the BWA provides an outstanding opportunity for recreationists.

Approximately one-quarter mile of fence made of wooden posts and wire (constructed in October 1979 as part of the Bisti Badlands closure to keep vehicular traffic from penetrating the area) and a box for visitor registration are located in T.24N., R.13W., Section 33 SW1/4. Although accurate visitor use statistics are considered incomplete, no primitive recreation user conflicts or problems are known to exist. According to a visitor registration book, visitor use is concentrated from April through September, although some use occurs year-round. Records show that use has declined from an average of 53 visits per month in 1982 to 22 visits per month in 1983 to 15 visits per month in 1984. Complete figures are not available for 1985. No recent Special Recreation Permits have been issued.

No demand or inquiries have been documented concerning commercial recreational livestock use (i.e. horses, burros, llamas).

Assumptions

The opportunity to experience solitude may be diminished by the concentration of visitors at specific boundary locations, in the areas of high scenic value, and in areas of audible and visual outside influences.

Visitor use in 1985 is expected to increase to 1982 levels because of the high level media attention and organized trips to the BWA, but then return to 1984 levels or below. The primary season of use may continue to be April through September. The Gateway Wash area is expected to continue to be the primary access point.

The visitor must assume the risks of entering the BWA as a consequence of isolation from the conveniences of a technological world.

Management Policies

Developments for recreation and visitor use will be the minimum amount necessary for protection of the wilderness resource, public health and safety, and will be located outside the BWA. There will be no restrooms, or developments for potable water.

Recreation developments must be analyzed through an environmental assessment and include stipulations that require facility construction and materials which harmonize with the natural surroundings. Site-specific plans will be prepared.

Visual Resource Management Class I objectives and Federal Class II and State air quality standards will be maintained to establish the limits of acceptable change.

Valid and reliable visitor use and impact data will be gathered to further the planning and management efforts for the BWA, including but not limited to resource impacts, use patterns, visitor behavior, expectations, perceptions, and personal data such as age, occupation and education. This information will be used to establish social indicators for measuring the limits of acceptable change.

The regulations associated with the Bisti Badlands closure to motorized vehicles and collection of petrified wood will remain in effect. Recreational or hobby gathering of non-fossil nonrenewable mineral specimens in other parts of the BWA will be discouraged, and limited to methods that cause minimal surface disturbance.

Information and education media will include the regulations in effect for the BWA.

Management Actions

A parking facility will be established outside the BWA in T.23N., R.13W., Section 5. A project plan and an environmental

assessment will be prepared by the recreation coordinator to analyze the level and type of construction. Funding for this project will be requested in the FY 88 Annual Work Plan.

The existing one-quarter mile of fence and the registration box will be removed by the wilderness coordinator when construction of the fence along the powerline right-of-way near Gateway Wash is complete (FY 87).

A self-issued registration system will be designed and implemented by the Farmington Resource Area recreation coordinator to assist in the collection of visitor use data (FY 88). It will be located near the parking facility.

A registration box and book will be maintained by the recreation coordinator to assist in collecting visitor use data (FY 86).

The Farmington Resource Area recreation coordinator will collect available data from existing sources on air quality (FY 87). Limits of acceptable change indicators and standards will be selected and monitored annually.

The FRA wilderness and recreation coordinators will establish social indicators of limits of acceptable change and begin monitoring (FY 87).

WILDLIFE

Management Objectives

The WILDLIFE management objectives are to preserve and protect crucial habitats for wildlife (particularly nesting raptors) in their natural conditon while providing minimal restriction to visitor use and access and to allow natural ecological succession of wildlife populations so long as they do not threaten resource and human values outside the BWA.

Current Situation

Relatively few wildlife species are found in the BWA. The badlands and the indian ricegrass - snakeweed dunes habitat sites are the two standard wildlife habitat sites occurring in the BWA. Appendix H contains a list of the common species of wildlife. Annual monitoring of raptor nests has been conducted since 1981 to aid with program compliance. A helicopter was used in 1985. Three key raptor nesting territories (two for ferruginous hawks and one for golden eagles) occur in the BWA. Two of the territories have been active for one or more nesting seasons since 1981. One pair of ferruginous hawks has nested three of the last five years, and one pair of golden eagles has nested twice during the same period. It appears that human disturbance by visitors caused abandonment in at least one of the three years the birds did not nest.

These species are intolerant of human disturbance early in the nesting season. Suter and Joness (1981) recommend individuals be kept at least 500 meters from active nest sites. There is no estimate of how many or what type of visitors can use the BWA before causing abandonment of the nesting areas. The ferruginous hawk is listed as a category 2 candidate species by the U.S. Fish and Wildlife Service.

Assumption

If visitor use increases above FY 82 levels, it may result in individuals wandering farther away from the more popular scenic areas, and will increase the chances they will observe and approach nesting raptors. Nest abandonment may occur if nesting raptors are disturbed.

Management Policies

Management will seek to maintain a natural distribution, number, and interaction of indigenous species of wildlife. Natural ecological processes will be allowed to occur in the wilderness resource as far as possible without human influences.

The preservation of sensitive, rare, threatened, and endangered species dependent on wilderness conditions will be favored.

Habitats of sensitive animals (including candidate species) will be managed and/or conserved to minimize the need for listing

those animals by either Federal or State governments in the future (BLM Manual 6840).

All studying and monitoring of wildlife and their habitat will be accomplished by nonmotorized/nonmechanical means. Annual monitoring of raptor nesting territories will continue with the only acceptable objective being no nest loss due to human disturbance. Data will be gathered on the relationship of visitor use and nesting raptors, and limits of acceptable change indicators and standards will be established.

If visitors are not voluntarily avoiding nesting raptors, the next step will be to restrict access to buffer zones around active nests. Data gathering and analyses will attempt to establish a clear cause-effect relationship between visitor use and nest abandonment. If there is a strong positive correlation, restrictions will be achieved through signing, fencing or closing of buffer zones.

All information and education media will address the sensitivity issues of nesting raptors.

Management Actions

Biweekly visits to raptor territories by the FRA wildlife biologist will occur beginning March 1 each year (FY 86). If territories are active, monitoring will be continued through July. Visitors will also be observed to determine if they are approaching active nests.

The FRA wilderness coordinator and wildlife biologist will establish wildlife indicators and limits of acceptable change standards and begin annual monitoring (FY 86).

PART IV

WILDERNESS MANAGEMENT STRATEGY

This part represents an activity planning level for management of the BWA. The Limits of Acceptable Change (LAC) System (Stankey, et al. 1985) will be the strategic approach to wilderness management planning. A management planning strategy is incorporated into this document for two specific reasons. First, the BLM Manual 8560 states that the limits of acceptable change will be defined for each wilderness area. And second, the BLM Manual 8561 states that the evaluation of the limits of acceptable change will be required prior to establishing any wilderness use regulations or restrictions including quota or permit systems.

The Limits of Acceptable Change (LAC)

The LAC System is a nine-step process designed to alert managers to unacceptable changes and possible degradation of the wilderness before it's too late to correct the situation, thus, escaping the reactionary syndrome that seeks to direct management. A detailed explanation of this nine-step process is described by Stankey et al. 1985 and is outlined below:

-- Step 1: Identify area concerns and issues.

-- Step 2: Define and describe opportunity classes.

-- Step 3: Select indicators of resource and social conditions.

-- Step 4: Inventory resource and social conditions.

-- Step 5: Specify standards for resource and social conditions.

-- Step 6: Identify alternative opportunity class allocations.

-- Step 7: Identify management actions for each alternative.

-- Step 8: Evaluation and selection of an alternative.

-- Step 9: Implement actions and monitor conditions.

The concept driving the LAC System centers on desired quality conditions of the wilderness resource and experience. Recognizing that at least some impact occurs to natural ecological processes and environmental perceptions as a result of human influences, the question focuses on the type and amount of change that is acceptable. This level or limit of acceptable change signals the point of degradation or below par quality conditions. The LAC System allows managers to predict unacceptable changes and apply corrective management actions to prevent degradation before the conditions deteriorate to unacceptable levels.

Application of the nine-step LAC System has been modified to the BWA management situation. Part III of this document, the Wilderness Management Program, has already identified the need to identify limits of acceptable change for range conditions, raptors, air quality and the social environment. Other physical, social, and biological indicators may also be selected to further reflect the integrity of the wilderness resource. However, before the LAC System can be completely implemented, data will need to be collected in order to form a baseline for which to set the limits of acceptable change. These limits, when set, will define the quality of desired conditions in order to perpetuate the stability of the wilderness resource. As an initial step towards LAC System implementation, the BWA has a system in place and operating for evaluating visual

impacts to the natural environment. The system is called the Visual Impact Evaluation System (Tannery, et al. 1985).

The Visual Impact Evaluation System (VIES)

The heart of the VIES is the identification of unnatural visual impacts to the wilderness. Visitor dissatisfaction is one result of unnatural visual impacts in a wilderness environment. Another result is a strong indication of degradation of the biophysical elements of the ecosystem and disruption of natural ecological processes.

To provide readers with an example of how the VIES is applied, the following hypothetical case is presented. The Area Manager is interested in measuring the "limits of acceptable change" (LAC) for the visual impact indicator - Vehicle Routes near Hunter Wash. The wilderness coordinator selects a specific site near the wash where vehicle access is possible due to the flat terrain and lack of barriers. The VIES worksheet is then completed.

sures. The vehicle track is reclaimed by utilizing a horse drawn rake to fill in rills and loosen compacted soils in the badlands. A fence is then constructed to prevent vehicle penetration and the affected area is left to the natural elements of wind and rain. Three months pass and the site is rated again. This time a rating of "1" is recorded, meaning that some evidence of the vehicle track remains. Even though the rating still exceeds the LAC standard it is determined that the improved conditions would continue, thus, no further management action is prescribed. Six months pass and the site is rated again. The rating now shows a "0" which complies with the established LAC standard, thus, preventing possible degradation of the wilderness. End of hypothetical case.

It should be noted that VEHICLE ROUTES is just one of twelve visual impact indicators in the VIES. Exceeding the LAC standard of one indicator does not necessarily mean that wilderness conditions have been degraded, but it does signal that there is an unacceptable

Visual Impact Indicator	Criteria 0	1	2	Baseline Rating	LAC Standard
Vehicle Routes	No Evidence	Some Evidence of Two Track Travel	Mechanically Improved Route	2	0

The baseline rating equals "2" which is compared to the LAC standard which equals "0". This standard exists because vehicles are prohibited in this area. Since the baseline rating exceeds the LAC standard, possible degradation of the wilderness may occur. In this case, the Area Manager prescribes immediate rehabilitation measures. The vehicle track is reclaimed by utilizing a horse drawn rake to fill in rills and loosen compacted soils in the badlands. A fence is then constructed to prevent vehicle penetration and the affected area is left to the natural elements of wind and rain. Three months pass and the site is rated again. This time a rating of "1" is recorded, meaning that some evidence of the vehicle track remains. Even though the rating still exceeds the LAC standard it is determined that the improved conditions would continue, thus, no further management action is prescribed. Six months pass and the site is rated again. The rating now shows a "0" which complies with the established LAC standard, thus, preventing possible degradation of the wilderness. End of hypothetical case.

It should be noted that VEHICLE ROUTES is just one of twelve visual impact indicators in the VIES. Exceeding the LAC standard of one indicator does not necessarily mean that wilderness conditions have been degraded, but it does signal that there is an unacceptable change in wilderness conditions. This gives the Area Manager a chance to implement corrective actions before wilderness conditions deteriorate to a point of degradation.

A VIES users guide and full documentation will be available for review at the Farmington Resource Area Office.

APPENDIX A

EXCERPTS FROM THE SAN JUAN
WILDERNESS PROTECTION ACT 1984

Title I - San Juan Basin

Sec. 101. This Act may be cited as the "San Juan Basin Wilderness Protection Act of 1984".

Sec. 102.(a) In furtherance of the purposes of the Wilderness Act (16 U.S.C. 1131-1136), the following lands are hereby designated as wilderness, and, therefore, as components of the National Wilderness Preservation System--

(1) certain lands in the Albuquerque District Bureau of Land Management, New Mexico, which comprise approximately three thousand nine hundred and sixty-eight acres, as generally depicted on a map entitled "Bisti Wilderness--Proposed", dated June 1983, and which shall be known as the Bisti Wilderness; and

(2) certain lands in the Albuquerque District of the Bureau of Land Management, New Mexico, which comprise approximately twenty-three thousand eight hundred and seventy-two acres, as generally depicted on a map entitled "De-na-zin Wilderness--Proposed", dated June 1983, and which shall be known as the De-na-zin Wilderness.

(b) Subject to valid existing rights each wilderness area designated by this Act shall be administered by the Secretary of the Interior in accordance with the provisions of the Wilderness Act, except that any reference in such provisions to the effective date of the Wilderness Act (or any similar reference) shall be deemed to be a reference to the effective date of this Act, and any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

(c) As soon as practicable after enactment of this Act, a map and a legal description of each wilderness area designated by this Act shall be filed by the Secretary of the Interior with the Committee on Energy and Natural Resources of the United States Senate and the Committee on Interior and Insular Affairs of the House of Representatives. Each such map and description shall have the same force and effect as if included in this Act, except that correction of clerical and typographical errors in each such legal description and map may be made by the Secretary subsequent to such filings. Each such map and legal description shall be on file and available for public inspection in the Office of the Director of the Bureau of Land Management, Department of the Interior.

(d) Within the wilderness areas designated by this Act, the grazing of livestock, where established prior to the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations, policies, and practices as the Secretary of the Interior deems necessary, as long as such regulations, policies, and practices fully conform with and implement the intent of Congress regarding grazing in such areas as such intent is expressed in the Wilderness Act and this Act.

Sec. 104.(a) The Secretary of the Interior shall exchange such public lands or interest in such lands, mineral or nonmineral, as are of approximately equal value and selected by the State of New Mexico, acting through its commissioner of public lands, for any State lands or interest therein, mineral or nonmineral, located within the boundaries of any of the tracts designated as wilderness under section 2. For the purpose of this section, the term public lands shall have the same meaning as defined in section 103(c) of the Federal Lands Policy and Management Act of 1976.

(b) Within one hundred and twenty days of enactment of this Act, the Secretary of the Interior shall give notice to the New Mexico Commissioner of Public Lands of the tracts to be designated as wilderness pursuant to section 102 of this Act and of the Secretary's duty to

exchange public lands selected by the State for any State land contained within the boundaries of the designated wilderness area. Such notice shall contain a listing of all public lands which are located within the boundaries of the State, which have not been withdrawan from entry and which the Secretary identifies as being available to the State in exchange for such State lands as may be within the designated wilderness areas.

(c) The value of the State and public lands to be exchanged under this section shall be determined as of the date of enactment of this Act.

(d) After the receipt of the list of available public lands, if the commissioner of public lands gives notice to the Secretary of the State's selection of lands, the Secretary shall notify the State in writing as to whether the Department of the Interior consideres the State and Federal lands to be of approximately equal value. In case of disagreement between the Secretary and the commissioner as to relative value of the acquired and selected lands, the Secretary and the commissioner shall agree on the appointment of a disinterested independent appraiser who will review valuation data presented by both parties and determine the amount of selected land which best represents approximate equal value. Such determination will be binding on the Secretary and the commissioner. The transfer of title to lands or interests therein to the State of New Mexico shall be completed within two years of the date of enactment of this Act.

Sec. 105. (a) The Secretary of the Interior shall exchange any lands held in trust for an Indian whose lands are located within the boundary of the De-na-zin area referred to in section 102(a)(2) at the request of the Indian for whom such land is held in trust. Such lands shall be exchanged for lands approximately equal in value selected by the Indian allottee concerned and such lands so selected and exchanged shall thereafter be held in trust by the Secretary in the same manner as the lands for which they were exchanged.

(b) Except as provided herein, nothing in this Act shall affect the transfer to the Navajo Tribe of any lands selected by the Navajo Tribe pursuant to Public Law 93-531 and Public Law 96-305.

(c) Title to such in lieu selections shall be taken in the name of the United States in trust for the benefit of the Navajo Tribe as a part of the Navajo Reservation, and shall be subject only to valid existing rights as of December 1, 1983.

Sec. 106. Section 11 (a) of Public Law 93-531 (25 U.S.C. 640d-10) is amended--

(1) in paragraph (1) by striking out the last sentence, which begins "Such lands";

(2) by inserting after paragraph (2) the following. "Subject to the provisions of the following sentences of this subsection, all rights, title and interests of the United States in the lands described in paragraph (1), including such interests the United States as lessor has in such lands under the Mineral Leasing Act of 1920, as amended, will, subject to existing leasehold interests, be transferred without cost to the Navajo Tribe and title thereto shall be taken by the United States in trust for the benefit of the Navajo Tribe as a part of the Navajo Reservation. So long as selected lands coincide with pending noncompetitive coal lease applications under the Mineral Leasing Act of 1920, as amended, the Secretary may not transfer any United States interests in such lands until the noncompetitive coal lease applications have been fully adjudicated. If such adjudication results in issuance of Federal coal leases to the applicants, such transfer shall be subject to such leases. The leaseholders rights and interests in such coal leases will in no way be diminished by the transfer of the rights, title and interests of the United States in such lands to the Navajo Tribe. If any selected lands are subject to valid claims located under the Mining Law of 1872 the transfer of the selected lands may be made subject to those claims."; and

(3) by inserting the following new paragraph:

"(2) Those interests in lands acquired in the State of New Mexico by the Navajo Tribe pursuant to subsection 2 of this section shall be subject to the right of the State of New Mexico to receive

the same value from any sales, bonuses, rentals, royalties and interest charges from the conveyance, sale, lease, development, and production of coal as would have been received had the subsurface interest in such lands remained with the United States and been leased pursuant to the Mineral Lands Leasing Act of 1920, as amended, or any successor Act; or otherwise developed. The State's interest shall be accounted for in the same manner as it would have been if a lease had issued pursuant to the Mineral Lands Leasing Act of 1920, as amended.".

APPENDIX B

LEGAL DESCRIPTION

A legal description of the BWA is being prepared by the BLM-New Mexico State Office and will be included in the Final Draft.

APPENDIX C

PUBLIC INVOLVEMENT PROCESS

In December 1984, approximately one month after wilderness designation, nine representatives of the public were asked to serve as Volunteer Specialists in the wilderness management planning process. The nine volunteers represented organizations that had shown intense interest in such a group. The first meeting was held on February 9, 1985 to help identify issues for the Bisti Wilderness Management Plan. A field trip to the wilderness area helped to acquaint them with on-the-ground management problems. Twelve proposed issues were identified and later included in the Preplanning Analysis (April 1985).

A Volunteer Patrol Program was initiated in March 1985 with a call for additional public participation in the wilderness management planning process. Fifteen volunteers began immediate patrols of the wilderness area (on weekends) to record visitor use information. Their reports have provided vital data that has led to increased management awareness of on-the-ground problems in wilderness management. The program continues to operate effectively.

Following the release of the Preplanning Analysis, the nine Volunteer Specialists convened on May 18, 1985 to review and discuss the proposed management issues. Discussions helped to clearly define the issues and management direction the BLM should pursue.

A public Open House was held April 2 - 5, 1985 to answer questions about the planning process and to gain additional input regarding wilderness management.

On May 4, 1985 a public ceremony was held at the Bisti Wilderness to dedicate the area. Almost 400 attendees were treated to a luncheon co-sponsored by the Public Service Company of New Mexico, interpretive tours led by BLM personnel, and a host of speakers, featuring U.S. Congressman, Bill Richardson.

In late May, a doctoral candidate and a Wilderness Experience class from the University of New Mexico began to implement the Visual Impact Evaluation System. This system is a part of the "Limits of Acceptable Change" process and is being monitored as an integral part of the Wilderness Management Plan.

After extensive preparation and internal BLM review of the preliminary draft management plan, copies were mailed to the Volunteer Specialists. In order to facilitate maximum participation, two meetings were conducted, one in Farmington and the other in Albuquerque on October 21st and 22nd, 1985, respectively. The purpose of the meetings was to review the preliminary draft and to discuss the format and content of a public "popular" version of this document.

The Draft Bisti Wilderness Management Plan became available to the public in February 1986 and a sixty day public comment period began. A public Open House and two public meetings are tentatively scheduled in March 1986 to receive verbal comments before the Final Draft is released.

APPENDIX D

MANAGEMENT PLAN IMPLEMENTATION SEQUENCE

Implementation Date	Responsibility	Management Action refer to text for details - page	Date Completed	Working Document Reference Section
FY 85	Wilderness Coordinator	Patrol and Monitoring Record - III-4		1
FY 86	Archeologist	Removal of Antiquity Sign From Interior - III-8		2
FY 86	Archeologist	Posting Antiquity Signs at Boundary Locations - III-8		3
FY 86	Wilderness Coordinator	Update 1981 Map/ Brochure - III-5		4
FY 86	Wilderness Coordinator	All-Employee Orientation - III-6		5
FY 86	Range Conservationist	Inventory Additional Range Sites - III-11		6
FY 86	Paleontologist	Establish Advisory Committee - III-17		7
FY 86	Range Conservationist	Establish Range LAC Indicators - III-11		8
FY 86	Wilderness Coordinator	Remove Overhead Powerline, Reclaim Route - III-16		9
FY 86	Wilderness Coordinator	Remove car bodies and trash - III-16		10
FY 86	Area Manager	Resolve unauthorized occupancy - III-16		11
FY 86	Recreation Coordinator	Maintain registration box and book - III-19		12
FY 86	Archeologist	Periodic patrol and monitoring - III-8		13

Implementation Date	Responsibility	Management Action refer to text for details - page	Date Completed	Working Document Reference Section
FY 86	Wilderness Coordinator	Erect Entrance Sign - III-6		14
FY 86	Paleontologist	Federal Register Notice - III-17		15
FY 86	Wilderness Coordinator	Construct Fence-line - III-16		16
FY 86	Wildlife Biologist	Monitor raptor territories - III-20		17
FY 87	Wilderness Coordinator	Remove Bisti Badlands Fenceline - III-19		18
FY 87	Wildlife Biologist	Establish Wildlife LAC Indicators and Standards - III-20		19
FY 87	Recreation Coordinator	Establish Social LAC Indicators and Standards - III-19		20
FY 87	Recreation Coordinator	Collect Air Quality Data and Establish LAC Indicators - III-19		21
FY 87	Range Conservationist	Develop Range Management/Users Guide - III-11		23
FY 87	Chief of Operations	Fire Management Plan - III-4		24
FY 88	Chief of Operations	Search and Rescue Plan - III-4		25
FY 88	Recreation Coordinator	Construction of I&E Display - III-19		26
FY 88	Range Conservationist	Construct Fence-line - III-11		27
FY 88	Recreation Coordinator	Construct Parking Facility - III-19		28
FY 88	Area Manager	Revise Cooperative Agreement - III-11		29

Implementation Date	Responsibility	Management Action refer to text for details - page	Date Completed	Working Document Reference Section
FY 88	Recreation Coordinator	Design and Implement Self-Issued Registration System - III-19		29
FY 89	Range Conservationist	Construct Fenceline - III-11		30
Unknown	Realty Specialist	Acquisition of State Section 32, T.24N., R.13W. - III-4		31

APPENDIX E

U.S. Department of the Interior
Bureau of Land Management

Albuquerque District Office

Farmington Resource Area

Farmington, New Mexico

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR THE IMPLEMENTATION OF THE BISTI WILDERNESS MANAGEMENT PLAN

November 1985

ABSTRACT

In compliance with the National Environmental Policy Act (1969) and the BLM Manual 8561 - Wilderness Management Plans, an assessment has been made of the environmental consequences of implementing the Bisti Wilderness Management Plan. The result of this assessment was that the preferred alternative would not induce significant environmental impacts.

I. INTRODUCTION

This Environmental Assessment satisfies the Council on Environmental Quality regulations of implementing the National Environmental Policy Act (1969) requirements of identifying a preferred alternative in order to adequately consider and document the environmental consequences.

Background

The 1982 Draft Bisti, De-na-zin, Ah-shi-sle-pah Proposed Wilderness Areas Environmental Impact Statement (EIS) analyzed the environmental consequences of wilderness designation. This EIS concluded with the finding of no significant impact for the designation of the Bisti Wilderness Study Area as Wilderness. This Environmental Assessment addresses the environmental consequences of implementing the preferred alternative of the Bisti Wilderness Management Plan.

Purpose for and Need of the Proposed Action

The purpose for the proposed action is to fulfill the BLM Manual 8561 requirement that a management plan be completed for BLM-administered wilderness areas within two years after designation. The need of the proposed action is to comply with the legislation and national policy and to adequately manage the area as wilderness.

Compatibility With Existing Land Use Plans

Due to the passage of the San Juan Basin Wilderness Protection Act (1984), there is no valid land use plan for the Bisti Wilderness Area. The 1981 Chaco Management Framework Plan

provided administrative direction for the Wilderness Study Area before wilderness designation. The Farmington Resource Management Plan which will address the Bisti Wilderness Area is not scheduled to be completed until 1988.

II. ALTERNATIVES INCLUDING THE PREFFERED ALTERNATIVE

Four alternatives are analyzed in this environmental assessment. The preferred alternative represents the proposed action which is described below.

Preferred Alternative (Proposed Action)

Under this alternative, the management actions prescribed in the Bisti Wilderness Management Plan would be implemented. A detailed description of the proposed action is located in Part III. Wilderness Management Program, Management Action section for each element. A descriptive summary of the management actions the BLM would implement include: fencing portions of the exterior boundaries; constructing a parking facility; reclaiming affects of unauthorized activities; collecting management data; developing fire management and search and rescue plans; providing information and education materials; and retaining administrative responsibility of the area.

No Action Alternative (Amend the Existing Plan)

Under this alternative, the Bisti Wilderness Management Plan would not be implemented and the area would continue to be managed under the policy guidance of the 1981 Wilderness Management Policy (BLM Manual 8560). The 1981 Chaco Management Framework Plan which is the existing land use plan for the area would be amended.

Human Use Enhancement Alternative

Under this alternative, the BLM would allow human use and manipulation of the wilderness resource within the framework permissable in the Wilderness Act (1964) and the San Juan Basin Wilderness Protection Act (1984). A descriptive summary of the management actions the BLM would implement include: facilitate and encourage human use of the area through promotion and public relation efforts; provide vehicle access to several boundary locations; construct parking facilities with modern conveniences (i.e., restrooms, running water); construct trailheads and trails with displays and signing activities to aid in environmental interpretation; and allow motorized vehicle access with minimum restrictions to collection of fossils, artifacts and petrified wood.

Human Use Exclusion Alternative

Under this alternative, the BLM would seek to exclude human use and manipulation of the wilderness resource within the framework permissable in the Wilderness Act (1964) and the San Juan Basin Wilderness Protection Act (1984). A descriptive summary of the management actions the BLM would implement include: restrict and heavily stipulate all human uses of the area in order to allow natural ecological processes to function with minimum human influence; fence the entire boundary; allow no removal of fossils, artifacts, petrified wood or other natural materials; increase boundary and interior patrols; and implement a reservation system to control the amount of recreational use that will be allowed to occur.

III. AFFECTED ENVIRONMENT

The affected environment is described in detail in Part III. Wilderness Management Program in the Current Situation section of each wilderness element. Refer to the following elements and the associated page numbers:

	Page
Managerial Elements	
Administration	III-1
Fire	III-4
Information and Education	III-5
Scientific Study and Data Collection	III-6
Environmental Elements	
Cultural Resources	III-7
Livestock Operations	III-9
Mineral Resources	III-11
Naturalness	III-14
Paleontological Resources	III-16
Recreation and Scenic Quality	III-17
Wildlife	III-19

IV. ENVIRONMENTAL CONSEQUENCES

The preferred alternative (proposed action) would not have significant impacts on the wilderness resource. The proposed action complies exclusively with the finding of no significant impact as per the 1982 Environmental Impact Statement for the Bisti, De-na-zin, Ah-shi-sle-pah Proposed Wilderness Areas. There would be minor impacts to some of the environmental factors as described below:

Preferred Alternative (Proposed Action)

Economic Environment

Some commercial or business opportunities would be restricted. This impact is considered to be minute due to the lack of current demand.

Managerial Environment

The opportunities to resume the type and level of management, monitoring and development would be restricted. This impact restricts administrative actions but does not prohibit them. The impacts of restricting actions will occur in terms of funding and work efficiency and not effectiveness and thus, is not considered a significant impact.

Social Environment

Visitors to the area will be without the modern conveniences of civilization and therefore, may be exposed to personal danger and risks. This impact is considered small due to the inherent dangers of wilderness and the information and education efforts warning of these dangers. There would be impacts to paleontologists and others requesting motorized vehicle access due to the exclusion of this type of use on other than a case-by-case basis.

Physical and Biological Environment

The proposed action is viewed as having positive impacts on wilderness values by reclaiming and preventing the affects of unauthorized uses. There would be impacts to natural resources through erosional forces that act to destroy potential scientific and educational information. This impact is considered small due to the fact that no resources of scientific value have been located and educational values of resources are common in other areas.

No Action Alternative (Amend the Existing Plan)

The environmental impacts would be very similar to the ones descibed in the preffered alternative. The impacts to the social and the physical and biological environments would be increased due to the current level of unauthorized uses and their affects on naturalness, solitude and primitive recreation. Without a plan of action to prevent and reclaim the affects of unauthorized uses such as the ones described in the preferred alternative, the impacts are considered to negatively impact the wilderness character of the area.

Human Use Enhancement Alternative

Economic Environment

Commercial and business opportunities would be less restrictive. Due to the current lack of demand, this is not considered to be a significant impact.

Managerial Environment

The opportunities to resume the type and level of management, monitoring and development would be less restrictive. Motorized vehicle use would be allowed for resource management as well as stabilization, improvements and interpretive activities. The impacts from these activities would degrade wilderness values below present levels and potentially to unacceptable levels.

Social Environment

Increased developments and modern conveniences would most likely reduce personal danger and individual risk. These improvements may increase the number and types of users which may act to degade wilderness values below the present levels. Crowding and increased regulations may degrade the outstanding opportunities for solitude and primitive recreation.

Physical and Biological Environment

Increased levels and different types of human use may act to degrade the wilderness value of naturalness below the present level through the removal of fossils, artifacts, petrified wood and other natural resources, and the cumulative impacts of visitors on the fragile badlands environment along trails and at popular scenic areas.

Human Use Exclusion Alternative

The impacts under this alternative are considered positive in relation to the wilderness resource. By virtually eliminating human use of the area, natural ecological processes would function with as little human influence as possible. There could be significant impacts to the managerial environment because of the increased need for funding and personal required to effectively assure compliance with the regulations. There would be impacts to those requesting motorized vehicle access inside the wilderness.

V. CONSULTATION AND COORDINATION

The following organizations and their representatives have been sent a copy of this document for their comments. This document will also be made available to over 2000 individuals on the wilderness mailing list.

U.S. Congress
- The Honorable Pete Domenici
- The Honorable Manuel Lujan Jr.
- The Honorable Bill Richardson

Federal Agencies
- Bureau of Indian Affairs
- National Park Service
- U.S. Fish and Wildlife Service
- U.S. Forest Service

State of New Mexico
- Governor Toney Anaya
- Department of Game and Fish
- Natural Resource Department
- State Historic Preservation Officer

Local Governments
- City of Farmington, Mayor Dee J. Mantano
- Farmington Chamber of Commerce
- Farmington Visitors and Convention Bureau
- Navajo Tribe

Businesses
- Paragon Resources
- Public Service Company of New Mexico
- Sunbelt Mining Company

Organizations
- New Mexico Wilderness Coalition
- Sierra Club
- Wilderness Society

APPENDIX F

PLAN MONITORING AND REVISION PROCEDURES

Monitoring the Bisti Wilderness will include three procedures. First, general monitoring will be accomplished through patrols by volunteers as described in Part III. Wilderness Management Program, in the Administrative element section of this document. Second, resource-specific monitoring will be accomplished according to established guidelines of each program. Third, the limits of acceptable change system will monitor site-specific resource indicators throughout the area. Monitoring procedures and records will most likely indicate the need for plan revision.

Revision of this plan will be accomplished on two levels. This plan has been prepared for a ten year planning period with evaluations at five year intervals. The first level of revision will involve total plan revision based on: a massive increase in visitation, a major environmental change in the wilderness resource, or a cumulative increase in user-caused resource impacts that call for more restrictive measures for resource protection. A second level of revisions include information updates or minor revisions which will be written into the working document, dated and initialed.

APPENDIX G

LIST OF PARTICIPANTS

PLAN PREPARATION

Name/Title	Primary Responsibility	Education	Related Experience
Barbara Anne am Ende Geologist	Paleontolgical Resources	BS Geology University of Iowa	1 year Paleontologist
LouAnn Jacobson Ball Archeologist	Cultural Resources	MA Anthropology University of New Mexico	9 years Archeologist
Danny S. Charlie Navajo Coordinator/ Range Conservationist	Livestock Operations	High School Diploma Ignacio, Colorado	19 years Range Management
Myrna Finke Visual Information Specialist	Printing Coordinator, Cartographics	Certificate - Graphic Arts University of New Mexico	2 years Visual Information Specialist 4 years Cartographic Technician
Connie Howell Clerk-Typist	Word Processing	High School Diploma Rollins, Wyoming	6 years Clerk-Typist
Robert Moore Supv. Realty Specialist	Naturalness Section	BS Range-Forest Management Colorado State University	4 years Natural Resource Specialist 4 years Supv. Natural Resource Specialist 4 years Supv. Realty Specialist
Kathy I. Ollom Supv. Clerical Assistant	Word Processing	High School Diploma Clovis, New Mexico	3 years Supv. Clerical Assistant
F.M. O'Neill Supv. Natural Resource Specialist	Paleontological Resources	MA Biological Anthropology University of New Mexico	5 years Paleontologist
William L. Overbaugh Outdoor Recreation Planner	Team Leader	MA Outdoor Recreation University of New Mexico	1 year Recreation Tech. 3 years Outdoor Recreation Planner
Marcia Petta Wilderness Coordinator	Mineral Resources, Fire	MS Geosciences University of Arizona	3 years Geologist 4 years Environmental Scientist 1 year Wilderness Coordinator

PLAN PREPARATION

Name/Title	Primary Responsibility	Education	Related Experience
Jim Ramakka Wildlife Biologist	Wildlife Biologist	MS Wildlife Ecology University of Maine	13 years Wildlife Biologist
Marilu Waybourn Writer-Editor	Format Editor	AA Radio Communication Stephens College, Missouri	13 years Newspaper Production 2 years Public Relations

PLAN REVIEW - VOLUNTEERS

Name	Organization
Judy Bishop	State Department of Natural Resources Santa Fe, New Mexico
Dr. Steve Clark	Chamber of Commerce Farmington, New Mexico
David Glowka	Sierra Club Albuquerque, New Mexico
Fred Greyeyes	KNDN Radio Farmington, New Mexico
Ivan K. Holliday	Public Representative Farmington, New Mexico
Robert A. Jackson	Sunbelt Mining Co. Inc. Albuquerque, New Mexico
Dr. Spencer Lucas	University of New Mexico Albuquerque, New Mexico
Margie Ranc	Visitors and Convention Bureau Farmington, New Mexico
Clyde Underwood	Paragon Resources Inc. Albuquerque, New Mexico

APPENDIX H

COMMON SPECIES OF WILDLIFE

Scaled quail
Mourning dove
Horned lark
Says phoebe
Black-throated sparrow
Great-horned owl
Ferruginous hawk
Golden eagle
Rock wren
House finch
Prairie rattlesnake
Colorado side-blotched lizard

Coyote
Black-tailed jack rabbit
Red Fox
Cottontail rabbit
Pocket mouse
Deer mouse
Pocket gopher
Kangaroo rat
Northern grasshopper mouse
Antelope ground squirrel
Bull snake
Yellow-headed collared lizard

GLOSSARY

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A documented program which applies to rangeland operations on public land, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: (1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for public land through land use planning; (2) describes the type, location, ownership, and general specifications for the rangeland developments to be installed and maintained on public land to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

ANIMAL UNIT MONTH (AUM). The amount of forage required to sustain the equivalent of one cow, one horse, two elk, three Barbary sheep, five domestic sheep, five goats, five deer, or ten antelope for one month.

CATEGORY 2 CANDIDATE SPECIES. A species which is being considered by the U.S. Fish and Wildlife Service for listing as threatened or endangered but for which sufficient biological data for proposed listing is not yet available.

CUMULATIVE IMPACT. The aggregate impact of existing and proposed activities. Individual intrusions when considered by themselves may not impair the wilderness; however, when combined with other existing and pro- posed substantially unnoticeable impacts, the total effect may be sufficient to impair the wilderness.

IMPACT. The effect, influence, alteration, or imprint of a human activity.

IMPAIR. To diminish in value or excellence.

KNOWN GEOLOGIC STRUCTURE (KGS). A trap in which an accumulation of oil and gas has been discovered by drilling and which is determined to be productive. Its limits include all acreage that is presumptively productive [43 CFR 3100.0-5(a)]. Lands underlain by a KGS may be leased only through a competitive system.

LIMITS OF ACCEPTABLE CHANGE (LAC). The amount of human-caused change to biophysical or social components which are tolerable without the loss of wilderness character.

MANAGEMENT ACTION. An action carried out by BLM.

MECHANICAL EQUIPMENT. Use of hand or power machinery or tools.

PREFERENCE RIGHT LEASE APPLICATION (PRLA). A formal request made to the BLM for a non-competitive coal lease. PRLAs were issued by the Secretary of the Interior in the San Juan Basin between 1971 and 1973 to the holders of prospecting permits. These individuals or companies were required to demonstrate that, during the period of the permit, they had discovered commercial quantities of coal.

PRIMITIVE AND UNCONFINED RECREATION. Nonmotorized and nondeveloped types of outdoor recreational activities.

RAPTORS. Any predatory bird such as a falcon, hawk, eagle, or owl that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for tearing flesh.

RIGHT-OF-WAY. An easement or permit which authorizes public land to be used for a specific purpose that generally requires a long narrow strip of land; examples are roads, powerlines, pipelines, etc.

SAN JUAN BASIN. A large structural depression in the Colorado Plateau province.

SOLITUDE. Outstanding opportunities for solitude or primitive and unconfined recreation are wilderness characteristics examined in the intensive wilderness inventory. Factors contributing to opportunities for solitude are vegetative screening, topographic relief, vistas, and physiographic variety. 1. The state of being alone or remote from habitations; isolation. 2. A lonely, unfrequented, or secluded place.

UNNECESSARY OR UNDUE DEGRADATION. Impacts greater than those that would normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices, including use of the best reasonably available technology.

VISUAL IMPACT EVALUATION SYSTEM (VIES). The VIES is a management tool designed for the longitudinal collection of information concerned with monitoring and evaluating the visual "limits of acceptable change."

VISUAL RESOURCE MANAGEMENT (VRM) CLASS I. Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention.

WILDERNESS. The definition contained in section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

WILDERNESS STUDY AREA (WSA). A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 603 of FLPMA and section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

WILDERNESS AREA. An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. The definition contained in section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

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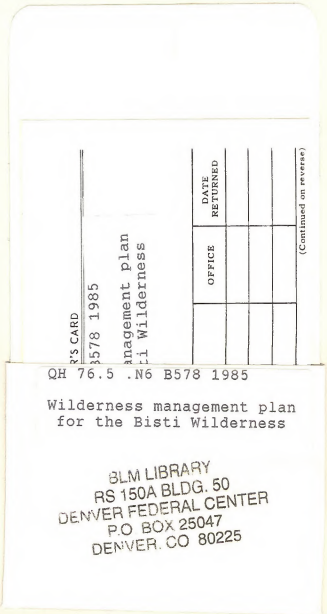
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